

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A welding apparatus for welding an element to a component, the apparatus comprising:

- a) a hand held welding gun including an element holder;
- b) a welding gauge ~~that is~~ fixed to the component; and
- c) a positioner attached to the gun, the positioner being elongated greater than and substantially parallel to an externally exposed portion of the element holder;

wherein the positioner maintains ~~is calibrated to maintain~~ a known distance between the element and the component, when the positioner is in physical contact with the gauge.

2. (currently amended) The apparatus of Claim 1, wherein the element is a metal stud and the component is a metal sheet, and the gauge has an offset section to engage a curved surface of the sheet.

3. (currently amended) The apparatus of Claim 1 [[2]], wherein the element is a metal weld stud and the component is a metal sheet ~~are parts~~ of a motor vehicle, and the weld stud is stroke ignition, drawn arc-welded onto the sheet.

4. (currently amended) The apparatus of Claim 1, further comprising an elongated positioner removably inserted into a receiver of alignment feature in the welding gauge, the positioner abutting against a bottom of the receiver.

5. (currently amended) The apparatus of Claim 4, wherein the gauge includes alignment feature is a hole through which the element and the holder extend, the hole being at least twice as wide as the holder.

6. (currently amended) The apparatus of Claim 1 [[5]], wherein depth of the gauge hole is adjustable.

7. (currently amended) The apparatus of Claim 4, wherein the positioner alignment feature is a rod-like pin.

8. (currently amended) The apparatus of Claim 1, further comprising a threaded adjustment member attached to the gauge, the member contacting the component wherein the gauge has at least three alignment features.

9. (currently amended) The apparatus of Claim 1, further comprising a second positioner, wherein the positioners are elongated, rod-like 8, wherein the alignment features are a combination of holes and pins.

10. (currently amended) The apparatus of Claim 1, further comprising adjusting the distance of a portion of the gauge relative to the component in a repeatable manner ~~4, wherein a positioner utilizes an alignment feature.~~

11. (currently amended) The apparatus of Claim 1 ~~[[6]]~~, wherein the ~~[[a]]~~ positioner is inserted into a ~~[[the]]~~ hole in the gauge.

12. (currently amended) The apparatus of Claim 1 ~~[[8]]~~, further comprising at least three positioners.

13. (currently amended) The apparatus of Claim 1, wherein the gauge is a plastic material ~~12, wherein each positioner utilizes an alignment feature.~~

14. (currently amended) The apparatus of Claim 12, wherein the positioners ~~alignment features~~ are placed in a triangle pattern around the element.

15. (currently amended) A welding system for joining a piece to a part, the system comprising:

- a) a hand welder operably welding the piece to the part;
- b) a holder operably holding the element relative to the part;
- c) a positioner offset relative to ~~behind the anterior end of~~ the holder and being attached to the welder; and

d) a welding gauge coupled to the part when the positioner is in contact with the gauge, ~~the piece being a distance from the part~~ the gauge including a through hole operably receiving the holder, the gauge further including a receiver having a bottom operably contacting the positioner, the receiver being adjacent the hole.

16. (currently amended) The apparatus of Claim 15, wherein the piece is a metal stud and the part is a metal sheet, and the gauge is three dimensionally contoured to engage a curved surface of the sheet.

17. (original) The apparatus of Claim 16, wherein the metal stud and the metal sheet are parts of a motor vehicle.

18. (original) The apparatus of Claim 15, further comprising an alignment feature in the welding gauge.

19. (currently amended) The apparatus of Claim 18, ~~wherein the alignment feature is a hole~~ 15, further comprising a threaded member extending between the gauge and the part.

20. (currently amended) The apparatus of Claim 19, wherein the threaded member allows the depth of the hole of the gauge to be ~~[[is]]~~ adjustable relative to the part.

21. (currently amended) The apparatus of Claim 15 ~~[[18]]~~, wherein the positioner alignment feature is a pin which is longer than the holder of the welder.

22. (currently amended) The apparatus of Claim 15 ~~[[18]]~~, wherein the gauge has at least three positioners alignment features.

23. (currently amended) The apparatus of Claim 15, further comprising a second positioner, wherein the positioners are elongated, rod-like ~~22, wherein the alignment features are a combination of holes and pins~~.

24. (currently amended) The apparatus of Claim 15 ~~[[18]]~~, wherein the hole in the gauge has a rectangular peripheral shape ~~a positioner utilizes an alignment feature~~.

25. (currently amended) The apparatus of Claim 15, further comprising a second receiver, with a bottom, mating with a second elongated positioner extending from the welder substantially parallel to the first positioner and the holder ~~20, wherein a positioner is inserted into the hole~~.

26. (currently amended) The apparatus of Claim 15 ~~[[22]]~~, further comprising at least three positioners.

27. (currently amended) The apparatus of Claim 15, wherein the gauge is a plastic material ~~26, wherein each positioner utilizes an alignment feature~~.

28. (currently amended) The apparatus of Claim 26, wherein the positioners
~~alignment features~~ are placed in a triangle pattern around the holder element.

29. (currently amended) A process including a welding gauge to weld an
element to a component using a hand held welder, the process comprising:

a) attaching the welding gauge to the component;
b) holding the element in the welder;
c) contacting ~~setting~~ the element against a ~~predetermined distance from the~~
component through a hole in the gauge;

d) turning on a pilot current;

e) lifting the element away from the component to create an electric arc;

f) turning on a welding current;

g) lowering the element onto the component to mingle the molten material;

and

h) solidifying the combined molten material to weld ~~welding~~ the element to
the component.

30. (currently amended) The process of Claim 29, wherein the element is a
metal stud and the component is a metal sheet, further comprising engaging a curved
surface of the sheet with a three dimensionally contoured section of the gauge.

31. (original) The process of Claim 30, wherein the metal stud and the metal sheet are parts of a motor vehicle.

32. (currently amended) The process of Claim 29, further comprising removably inserting an elongated positioner into a mostly enclosed receiver of alignment feature in the welding gauge.

33. (currently amended) The process of Claim 32, wherein the gauge includes alignment feature is a hole through which the element and an element holder of the welder extends, the hole being at least twice as wide as the holder.

34. (currently amended) The process of Claim 33, further comprising adjusting the depth of the gauge hole.

35. (currently amended) The process of Claim 32, wherein the positioner alignment feature is a pin which is longer than an element-holder of the welder.

36. (currently amended) The process of Claim 32, wherein the gauge has at least three gauge-positioners alignment features.

37. (currently amended) The process of Claim 29, further comprising aligning ~~36, wherein the alignment features are~~ a combination of holes and elongated, rod-like pins.

38. (currently amended) The process of Claim 29, further comprising adjusting the distance of a portion of the gauge relative to the component in a repeatable manner 32, wherein a positioner utilizes an alignment feature.

39. (currently amended) The process of Claim 34, ~~wherein a positioner is inserted into the hole 29~~, further comprising adjusting a threaded member attached to the gauge, the member contacting the component.

40. (cancelled).

41. (currently amended) The process of Claim 29, further comprising making the gauge from a plastic material 40, ~~wherein each positioner utilizes an alignment feature.~~

42. (currently amended) The process of Claim 36, further comprising placing 40, wherein the positioners alignment features are placed in a triangle pattern around the element

43. (cancelled).

44. (new) A stud welding apparatus comprising:

a) a stud welder;

b) a gauge including at least one through-hole operably aligned with the welder;

c) at least one positioner extending between and operably positioning the welder relative to the gauge, the gauge being disengaged from the welder after welding; and

d) at least one adjustable member including a section attached to the gauge and a workpiece-contacting end extending from a side of the gauge substantially opposite the positioner.

45. (new) The apparatus of Claim 44, wherein the adjustable member is externally threaded, the welder is a hand-held welding gun, and the gauge is disengagable from the welder without requiring loosening of any fasteners.